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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,879	09/26/2001	Edmun ChianSong Seng	934.138US1	9207

7590 03/02/2004

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EXAMINER

KIM, PAUL L

ART UNIT PAPER NUMBER

2857

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/963,879	Applicant(s) SENG ET AL.	
	Examiner Paul L Kim	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14-17, 25 and 26 is/are pending in the application.
 4a) Of the above claim(s) 18-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 11, 14-17, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 4-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 18-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement.

Applicant's election with traverse of Group I is acknowledged. The traversal is on the ground(s) that group II should be examined. This is not found persuasive because group I discloses a method of verifying read data and retrying a time domain signal to noise ratio of a storage device while group II, discloses downloading ENSR and determining ENSR value of a storage device. The two groups require separate searches.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 10, 11, 14-17, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behrens et al in view of Kusbel et al.

With regard to claims 1, 10, 11, 16, 17, 25, and 26, Behrens et al teaches a method and apparatus for processing data signals of a mass storage device comprising:

a disc attached to a base with an actuator and a disc drive controller (col. 1, lines 36-45) programmed to retry verification of read data at a phase level (col. 5, lines 37-52) and retry an equalized signal to noise ratio at a global level (col. 6, lines 24-34).

Behrens et al, however, does not specify the global level retry being in a time domain. Kusbel et al teaches a method for optimizing read/write data of a disc drive by performing time domain equalization of read signals (col. 5, lines 39-65). Since Behrens et al and Kusbel et al are both within the art of processing error data of a disk drive by determining an equalized signal to noise ratio of read data, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Behrens et al, so that global level retry is performed with a time domain, as taught by Kusbel et al, so as to derive the benefit of enhanced error correction performance.

With regard to claims 2 and 14, Behrens et al teaches verifying and determining qualification of all phases of data and determining exhaustion of phase level retry (col. 7, lines 54+).

With regard to claims 3 and 15, Behrens et al teaches comparing the equalized signal to noise ratio to a threshold and determining exhaustion of global level retry (col. 6, lines 14+).

Allowable Subject Matter

4. Claims 4-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach determining ESNR of a mass storage device by reading and writing pseudo random data into a buffer.


Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim teaches a method of providing stability in reproducing recorded data from an optical disc. Zook teaches a method of correcting errors in the read data from a storage device.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is 571-272-2217. The examiner can normally be reached on Monday-Thursday 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PK
February 22, 2004


MARCO HOFF
SUPERVISOR, EXAMINER
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